What Is Claimed Is:

    1. An apparatus of transmitting packets, comprising: a plurality of interfaces for transmitting and receiving packets; switches connected to said plurality of

5   interfaces; a statistic information collecting processor connected to said switches; means for analyzing header information imparted to said packets; and means for counting an amount of packets to be transmitted or received through said interfaces, wherein

10   said statistic information collecting processor predicts the amount of packets to be received by said plurality of interfaces from said header information and said amount of packets which have been analyzed, and wherein

    on the basis of said amount of packets predicted, the

15   interfaces for transmitting the packets will be selected.

    2. The apparatus of transmitting packets according to Claim 1, wherein said means for analyzing header information and said means for counting the amount of packets are included in said

20   statistic information collecting processor.

    3. The apparatus of transmitting packets according to Claim 1, further comprising a line card, connected to said plurality of interfaces, provided with said means for analyzing header information and said means for counting the

25   amount of packets.

4. The apparatus of transmitting packets according to Claim 1, further comprising a bus for directly connecting said interfaces and said statistic information collecting processor.

5. The apparatus of transmitting packets according to Claim 1, wherein said interfaces for transmitting and receiving packets have means for storing, in a frame, at least a portion of a header imparted to at least one or more packets which said interfaces transmit and receive.

6. The apparatus of transmitting packets according to Claim 5, wherein a plurality of headers of packets to be multiplexed into said frame are all equal to one another in size.

7. The apparatus of transmitting packets according to Claim 5, wherein said means for multiplexing determines length of a header portion to be extracted from a plurality of packets in response to information indicating classification of said packets which have been set to headers to be imparted to each of said packets to multiplex into one frame.

8. The apparatus of transmitting packets according to Claim 1, further comprising said plurality of statistic information collecting processors.

9. The apparatus of transmitting packets according to Claim 1, further comprising an extension function

processor connected to said load balancing processor, said extension function processor performing processing to be executed on a higher layer than a layer on which a received packet is transferred.

5   10. The apparatus of transmitting packets according to Claim 3, further comprising a table provided on said line card, on which relationship of correspondence between header information of the received packet and destination of the packet is described.

10   11. The apparatus of transmitting packets according to Claim 10, further comprising means for renewing said table on the basis of said amount of packets predicted.

12. A method of transmitting packets to be used in an apparatus of transmitting packets having a plurality of
15 interfaces for transmitting and receiving packets and means for processing packets, comprising the steps of:

       receiving packets through said interfaces;

       counting a number of said packets received;

       predicting a number of packets to arrive at one of said
20 plurality of interfaces in the future on the basis of said number of packets counted; and

       selecting an interface for transmitting a transmitted packet on the basis of said number of packets predicted.
[Claim 13]

The method of transmitting packets according to Claim 12, further comprising a step of multiplexing a plurality of header information of said received packet into one.

14. The method of transmitting packets according to Claim 13, further comprising a step of extracting only a portion of said header corresponding to fixed length from said received packet.

15. The method of transmitting packets according to Claim 14, further comprising a step of extracting a header of said received packet only by a size corresponding to information indicating classification of said packet set to a header to be imparted to each of said packets.

16. An apparatus of transmitting packets, comprising: a plurality of interfaces for transmitting and receiving packets; switches connected to said plurality of interfaces; a statistic information collecting processor connected to said switches; means for analyzing header information imparted to said packets; and means for counting an amount of packets to be transmitted or received through said interfaces, wherein

said statistic information collecting processor selects an interface for transmitting the packet on the basis of said amount of packets counted.